The Use of Animals in Research and the Bioethical Decision-Making Model

An Honors Thesis (ID 499)
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April, 1991

Graduation: May, 1991

INTRODUCTION

The bioethical decision-making model was first introduced at Ball State University by Dr. Jon Hendrix and Dr. Thomas Mertens. Bioethics refers to ethical problems that arise in the biological and medical fields.

Most people think that ethics means a list of do's and don'ts by which people live their lives. However, ethics actually refers to reflective thinking and the use of rational thought processes to determine the best possible course of action in the face of conflicting choices (Hendrix 1980).

One cannot make a rational ethical decision without reviewing the different sides to a given situation and by reviewing one's own personal values. The decision-making model helps to dissect bioethical question and allows one to view many possible solutions. By the end of the decision-making model, one is able to choose a solution to the bioethical question based upon one's own values and intellect.

In any type of ethical dilemma there are no absolutes. No one solution is absolutely correct or absolutely incorrect. In fact, the solution that one might pick today may not be the same solution that one would pick five years in the future. Solutions should be chosen by what one knows and feels in the present. Thus, in solving an ethical problem, one asks, "What ought I do?"

STEPS TO USING THE DECISION-MAKING MODEL

STEP 1- Identify the ethical problem. Always phrase the problem as a question beginning with, "What ought I do?" or "Ought I do?" (See example STEP 1)

STEP 2- Write a short paragraph on why you have identified the problem as ethical.

STEP 3- Use the "I" value sheet at the end of the model to list five personal values that are expressed in your paragraph.

Keep in mind that the "I" value words will have different meanings for different people. Give your own meanings to each word. Also, each "I" value word can have many meanings depending on the situation. If there are words that you do not understand or have no meaning to you cross them out. However, if there are words that you would like to add, do so but give the meaning that word holds for you.

STEP 4- Rank the five values from 1 = value most important to you to 5 = value least important to you.

STEP 5- List alternative solutions to your ethical problem. These solutions do not have to agree with your values. Make sure to phrase all of your possible solutions in the same grammatical form. (See example Step 5)

STEP 6- Rank the solutions from the solution that your values agree with most (#1) to the solution that your values agree with least (#?).

STEP 7- Restate #1 solution in the blank provided.

STEP 8- Using the "I" value sheet, list the values or principles that made you rank this solution as your first choice.

STEP 9- For each "I" value word, give a brief personal meaning. (See example Step 9)

STEP 10- Restate the solution you agree with least (ranked last) in the blank provided.

STEP 11- Using the "I" value sheet, list the values or principles that made you reject this solution.

STEP 12- For each "I" value word, give a brief personal meaning.

STEP 13- For your #1 solution, list 10 consequences if your solution were implemented world-wide.

STEP 14- List which system the consequence would affect such as home, family, business, government, professions, economics, psychology, medicine, law, and theology.

STEP 15- Assess each consequence as being either good (+) or bad (-). (See example Step 15)

STEP 16- Tally your (+) and (-) marks. Are there any negative marks more important to you than positive marks. If yes, star them.

STEP 17- List five reasons why others may not agree with your #1 solution.

STEP 18- Restate your solution and determine your confidence of your solution from high confidence = 1 to low confidence = 4.

Seat No._____

 Name Example

BIOETHICAL VALUE-CLARIFYING, DECISION-MAKING MODEL
RESPONSE SHEET

I. Identify problem. Must be a problem that conflicts with at least two of your values or ethical principles and pulls you in two directions. State problem as an ought to do question (e.g, "what ought I do when ....")

STEP 1 Ought I terminate my pregnancy since an amniocentesis test has shown that the baby will be born with Down's Syndrome?

(a) Write a short paragraph on why you have identified your problem as a value/ethical conflict for you.

STEP 2 If I were to have this baby my other children and husband may feel neglected. Also, our family may not be able to handle the expense of raising a Down's Syndrome child. Yet, this child would be a part of my husband and myself. I do not know if I could abort it.

(b) Use the "I Value Sheet" attached or a narrative of your values and identify and list five (5) personal values you hold that are expressed in your problem paragraph statement.

Ranking (c)	
1	1. Family
STEP 3 3	2. Word
2	3. Self worth
STEP 4 5	4. Work
4	5. Equilibrium

(c) Rank these values from #1 = most important to you to #5 = least important to you.

(d) Are values numbered 1 and 2 above in conflict when you explore your problem. Yes X No____

II. List as many alternative solutions to the problem as you can, even if some do not agree with your values or principles (minimum of 5).

	Ranking		Solutions
	5	1.	Yes, have an abortion.
STEP 5	1	2.	No, have the baby and raise it at home.
	3	3.	No, have the baby and institutionalize.
STEP 6	4	4.	No, have it and put the baby up for adoption.
	2	5.	No, have the baby and hire a nurse to care for it.
		6.	
		7.	
		8.	
		9.	
		10.	

III. Rank your alternative solutions from the one (#1) your values agree with most to the one (#?) your values agree with least. (Use ranking column beside part II.)

IV. Take your #1 solution and list the VALUES/PRINCIPLES you hold that cause you to rank it #1. #1 solution (state it): Have the baby and raise it at home.

STEP 7 Values or principles you hold that support this solution: Please try to explore at least 8 values.

		I Value	Personal Meaning of Value Word
	1.	Family	Support of my children and husband.
	2.	Self-worth	How I view myself.
STEP 8	3.	Education	My upbringing and experiences.
	4.	Word	My faith and beliefs in God.
	5.	Rights	The child has a right to live.
STEP 9	6.	Technology	The doctors and therapists are finding new methods.
	7.	Ed. (certification)	Teaching Down's children.
	8.	Community	How other people think of me and my family.
	9.	Affection	I could love this child no matter what.
	10.		

V. Take the solution you agree with least (ranked last) and list those VALUES/ PRINCIPLES you hold that cause you to rank it last. Last solution (state it):

STEP 10 Have an abortion.

Values or principles you hold that cause you to reject this solution. Please try to explore at least 8 values.

	I Value	Personal Meaning of Value Word
1.	Self-worth	I don't think I could live with my decision.
2.	Word	My religion does not condone abortion.
STEP 11 3.	Health	Something could go wrong with the abortion.
4.	Community	What others thought of my abortion.
5.	Family	My family might not understand.
STEP 12 6.	Technology	The test may be wrong.
7.	Justice	I would view abortion as murder.
8.	Wholeness	Abortion would take away a part of me.
9.		
10.		

VI. For your #1 ranking, list as many probable CONSEQUENCES you can imagine if that solution were implemented world-wide. Be sure to include consequences that affect such systems as: home, family, business, government, professions, economics, psychology, medicine, law, and theology.

Consequence Assessment	System		Consequence
-	Medical	1.	There would have to be more institutions.
STEP 13 -	Government	2.	The government would have to spend $$ to take care of them.
+	Medical	3.	Hospitals would have to provide more natal care.
+	Social	4.	Society may learn to understand and accept Down's children.
STEP 14 +	Family	5.	Experience great love and joy with a Down's child.
+	Medical	6.	Maybe less abortions would be performed.
+	Family	7.	Families brought together by adversity.
STEP 15 -	Economic	8.	Families spend a great deal of money on Down's child.
+	Education	9.	Better educational facilities for Down's Children.
-	Family	10.	Some families may fall apart from the strain.

VII. Place a (+) beside each consequence you hold as "good" and a (-) beside each consequence you hold as "bad". (Use column beside part VI.) Ask yourself, "Would I be willing to have this action or consequence applied to me?"

VIII. Tally your + and - marks. Are there any negative marks that are more
STEP 16 important to you than the positive marks? Yes_____ No__X__. If yes, star them.

IX. Do you hold any ethical principles that conflict with your number one decision or its consequences? If so, list them; then restate your solution or pick another solution (i.e., #2) and work through steps III through IX. If not, your decision is valid for you at this time in your life.

X. List five reasons why others may not agree with your solution.

1. They may think it is too much trouble.
2. They may think that as a taxpayer they would be burdened.

STEP 17

3. They may think the child should be institutionalized.
4. They may think my other children will suffer.
5. They may think that it would hurt my marriage.

XI. Restate your solution and place a confidence or conviction assessment on it by Xing the number on the confidence sequence.

STEP 18

High Low
X
1-----2-----3-----4
Confidence Confidence

I should have the baby and raise it at home.

"I" VALUES*

1. Self Worth
2. Community (personalist)
3. Food/Warmth/Shelter
4. Harmony/Systems
5. Intimacy
6. Recreation/Freesence
7. Self Preservation
8. Work/Labor
9. Relaxation
10. Solitude
11. Ownership
12. Prestige/Image
13. Truth/Wisdom/Insight
14. Being Liked
15. Achievement/Success
16. Transcendence/Global/Confluence
17. Justice
18. Self Competence/Confidence
19. Self Centeredness
20. Self Directedness
21. Sensory Pleasure/Sex
22. Instrumentality
23. Self Control
24. Friendship
25. Social Affirmation
26. Empathy
27. Discovery/Delight
28. Congruence
29. Equity/Rights
30. Lay/Guide
31. Knowledge/Discovery/Insight
32. Self Assertion
33. Self Delight
34. Wonder/Curiosity
35. Health (personal)
36. Creativity/Ideation
37. Security
38. Corporation/Construction/ New Order
39. Synergy
40. Being Self
41. Power/Authority/Honesty
42. Integration/Wholeness
43. Affection/Physical
44. Education (certification)
45. Interdependence
46. Community/Supportive
47. Limitation/Celebration
48. Service/Vocation
49. Cooperation
50. Presence/Dwelling
51. Education/Knowledge/Insight
52. Simplicity/Play
53. Equilibrium
54. Word
55. Ecority/Beauty/Aesthetics
56. Convivial Tools/Intermediate Technology
57. Human Dignity
58. Family/Belonging
59. Art/Beauty/As Pure Value
60. Play/Leisure

*Note: Strike out values that have no meaning for you and add others that do have meaning for you. Please try to define the added values on back of this page.

THE USE OF LABORATORY ANIMALS

For over a century, people have been concerned about the humane treatment of animals. The movement started in England and soon crossed the Atlantic to the United States. Today animal protection groups champion many issues: anti-hunting, anti-trapping, livestock protection, vegetarianism, pet rights, and most importantly animal research. Some prominent groups in the United States are the Animal Liberation Front (ALF) and People for the Ethical Treatment of Animals (PETA). Animal activist groups believe that animals should be given the respect, individual freedom, and dignity that are considered basic human rights. These ideas come from a 19th century utilitarian philosopher, Jeremy Bentham. He said that the question of how to treat animals should not be "Can they reason?" or "Can they talk?" but "Can they suffer?" The animal rights groups do not agree with the commonly held Judeo-Christian view that humans have authority over the lives of animals (Vaughan 1988).

Animal rights groups like ALF and PETA have tried many methods to curtail the use of animals in research. One method is lobbying the legislature to change the regulations for the humane care and use of laboratory animals. Another method used by animal rights groups is protesting. Groups like ALF have staged rallies and protests outside research institutions or formed human chains around the gate so people cannot get in or out. Some individuals within the animal rights group want to stop all animal research.

These people have blown up laboratories, broken into laboratories, destroyed research projects, and stolen laboratory animals. Animal rights activists have gotten some state legislatures to prohibit the use of pound dogs and cats in animal research. Scientists argue that these animals will be put to sleep so why not use them in Science (Birke 1988).

Many activists believe that most animals in research suffer great pain and distress. However, according to the United States Department of Agriculture (USDA), approximately 62% of animals in research experience no pain, 32% of the animals feel no pain because of the use of anesthesia or pain killers, and the remaining 6% of the animals may feel pain because the use of anesthesia or pain killers would obscure the results of the research (Vaughan 1988).

Another common belief held by animal rights activists is that most research is done on dogs, cats and monkeys. However, over 90% of all research is done on rats, mice, and other rodents.

ANIMAL USE REPORTED TO THE USDA, 1983

ANIMALS	NUMBER USED IN 1983
Dogs	182,425
Cats	55,346
Hamster	454,479
Rabbits	509,052
Guinea pigs	521,237
Non-human primates	59,336
Total	1,781,875

The Federal government has established regulations, such as the Animal Welfare Act, to protect animals in research. The act sets standards for housing, feeding, cleanliness, ventilation, and veterinary care. In 1985, the act was revised to include the establishment of an Animal Care and Use Committee within each institution involved in animal research.

Each committee has to contain a scientist, a veterinarian, and a person not association with the institution. The committee's duties are to make periodic inspections, turn in semiannual reports, and review any proposed research involving animals. The committee has to make sure that the institution has properly trained their employees, that they are providing animals with anesthesia or painkillers, and that the animals living quarters are the specified size. Other considerations of the committee are to decide whether the animal model is appropriate to the study, to determine whether non-animal models exist, and to establish qualification requirements for institution personnel (Holden 1987).

As mentioned above, the committee is responsible for determining whether non-animal models exist. Such models consist of tissue cultures, simple organisms, and computer programs. Even with the newest technology, computers or tissue cultures cannot replace the complex interactions that occur between cells in living animal models. Many scientists use both computer programs and animal research to achieve the most reliable data (Vaughan 1988).

Have you ever taken medicine that a doctor has prescribed? Have you ever taken over the counter drugs like tylenol or sudafed?

Have you ever drank a diet coke? Do you use shampoo or makeup? Do you wear perfume or cologne? All of these products have been tested on animals before they are even allowed on the market.

Each new drug must be tested on animals. The scientist measures how much of the active ingredients in the drug reaches the blood stream through blood tests. They also measure how much of the active ingredient directly leaves the body through urinalysis. The scientist also have to make sure that the drug is not toxic to the animals. Animal testing of one certain drug could take as long as ten years. When animal testing is completed, the drug can be tested on humans (Cohn 1987).

An example of the testing of a new drug is the discovery of penicillin. Penicillin was discovered by chance in 1928 by Alexander Fleming in London, England. An airborne fungus, named Penicillium notatum, fell onto an agar plate containing a culture of bacteria. The fungus killed the bacteria. Two chemist, Howard Florey and Ernest Chain, isolated the mold's active ingredients and developed the drug penicillin. From 1928 to 1942, years of experiments were conducted on animals to see if penicillin destroyed disease-causing bacteria. In 1942, penicillin was first used on a patient. The patient, Anne Miller, was dying of blood poisoning. After being given an injection of penicillin, the patients temperature of 106 returned to normal. Within a month, Anne Miller had fully recovered (Breo 1990).

Some animal rights activists say that the testing of consumer products on animals is unnecessary and cruel. Would you like to

try a new shampoo and have all of your hair fall out? That is why the Food and Drug Administration requires extensive safety testing on all cosmetic, toiletry, and fragrance products. Some companies have promoted products as being "non-animal tested" by their company. What this really means is that the company bought the formula from a supplier. The supplier had to test the product on animals before the product could be sold (FBR 1985).

Many different types of research are being done on animals in the biomedical field. For example, Alzheimer's disease is a mentally degenerative disorder commonly found in elderly humans. Elderly dogs and primates also develop neuritic plaques which are also found in humans suffering from Alzheimer's disease. Scientist believe that by studying the elderly dogs and primates that they can learn more about the disease and maybe find a cure. AIDS (Acquired Immunodeficiency Syndrome) is one of the United States largest health concerns today. Primates can develop a virus similar to the human AIDS virus. However, chimpanzees are the only primate other than humans that can be infected by the AIDS virus. None of the chimpanzees have developed any AIDS-like diseases. Unfortunately, the incubation period in humans can be as long as ten years and the chimpanzees have only been infected for five years.

In the battle against cancer, rats and mice are commonly used in the experiments. Cats are also used, especially in experiments dealing with therapeutic treatments of cancer. Female cats are used in the study of breast cancer because they develop feline

mammary carcinoma which is quite similar to human breast cancer.

Dogs develop many of the same heart diseases as humans do. Therefore, dogs are often used in experiments in the cardiovascular medical field (CSA 1989).

As you can see, test animals are usually picked because they share a common ailment with humans. In fact, most drugs, treatments, and surgical techniques used in veterinary medicine comes directly from research done on animals for human medical uses, like vaccines for feline leukemia or anthrax (FBR 1985).

Other medical advances that absolutely depended on the use of animals include radiation therapy; chemotherapy; open-heart surgery techniques; organ transplantation; and immunization against polio, diphtheria, mumps, and rubella. Americans live 25 years longer today than in 1900 because of new medical advances through animal research (Vaughan 1988).

What if there had been no animal research?

-----Polio would kill or cripple thousands of unvaccinated children and adults this year._

-----7500 newborn babies who developed jaundice each year could also develop cerebal palsy now preventable through phototherapy.

-----500,000 insulin-dependent diabetics would be dead.

-----Approximately 200,000 individuals who had coronary bypass surgery last year would have died.

-----The United States would have 1.5 million cases of rubella.

-----Because of the lack of medicine for high blood pressure, 50 million Americans would be at risk of death by heart attack, stroke, or kidney failure.

-----One million people would lose vision in at least one eye without cataract surgery.

-----7500 would die without kidney transplants

-----Thousands of children would die from acute lymphocytic leukemia without chemotherapy (FBR 1987).

QUOTES

Here are some quotes from both scientists and animal rights activists.

"To use either human or non-human animals for purposes that

are not in their own interests is both ethically unjustifiable and, in the long run, counter- productive." (Alex Pacheco, People for the Ethical Treatment of Animals, March 15, 1985)

"Fortunately, there are many who, while deeply and appropriately concerned for the compassionate treatment of animals, recognize that human welfare is and should be our primary concern." (Frederick A. King, Director of the Yerkes Regional Primate Research Center, Psychology Today, September 1984)

"One cannot intelligently assess vivisection in isolation from animal exploitation in other areas of human life: for food, furs, leather, in so-called sports, in movies, in the wild. Vivisection, properly seen, is simply one variation on the cultural theme of animal sacrifice." (Michael A Giannelli, The Funds for Animals, Inc., March 10, 1985)

"The use of any particular animals-say, a sheep- in medical research is more important than its use as lamb chops." (Carl Cohen, The University of Michigan, The Research News 35(10-12):9, 1984)

ETHICAL QUESTIONS

Now it is time for you to form everything you have read into an ethical question. You may use any of the ethical question below to finish the bioethical decision-making model, or you can use an ethical question that you have thought of on your own.

1. How if at all, should animals be used in research, testing, and education?
2. Are animals thinking, reasoning, and feeling beings?
3. What kind of rights should animals have?
4. Are humans and animals equal beings?
5. If humans and animals are not equals, how should be rank the animal kingdom? Is a cat better than a dog?
6. Do humans have authority over animals?
7. Are humans exploiting animals?
8. Should animals be used to test consumer products?
9. Should animals be killed to help advance human medical technology.
10. Are more laws needed to protect laboratory animals?

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Seat No._____

 Name_____

BIOETHICAL VALUE-CLARIFYING, DECISION-MAKING MODEL
RESPONSE SHEET

I. Identify problem. Must be a problem that conflicts with at least two of your values or ethical principles and pulls you in two directions. State problem as an ought to do question (e.g, "what ought I do when ....")

_____

_____

(a) Write a short paragraph on why you have identified your problem as a value/ethical conflict for you.

_____

_____

_____

_____

_____

_____

(b) Use the "I Value Sheet" attached or a narrative of your values and identify and list five (5) personal values you hold that are expressed in your problem paragraph statement.

Ranking (c)

_____ 1. _____

_____ 2. _____

_____ 3. _____

_____ 4. _____

_____ 5. _____

(c) Rank these values from #1 = most important to you to #5 = least important to you.

(d) Are values numbered 1 and 2 above in conflict when you explore your problem. Yes_____ No_____

II. List as many alternative solutions to the problem as you can, even if some do not agree with your values or principles (minimum of 5).

Ranking		Solutions
_____	1.	_____
_____	2.	_____
_____	3.	_____
_____	4.	_____
_____	5.	_____
_____	6.	_____
_____	7.	_____
_____	8.	_____
_____	9.	_____
_____	10.	_____

III. Rank your alternative solutions from the <u>one</u> (#1) your values agree with most to the <u>one</u> (#?) your values agree with least. (Use ranking column beside part II.)

IV. Take your #1 solution and list the VALUES/PRINCIPLES you hold that cause you to rank it #1. #1 solution (state it): _____
Values or principles <u>you hold</u> that support this solution: Please try to explore at least <u>8 values.</u>

	I Value	Personal Meaning of Value Word
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

V. Take the solution you agree with least (ranked last) and list those VALUES/ PRINCIPLES you hold that cause you to rank it last. Last solution (state it):

_____

Values or principles you hold that cause you to reject this solution. Please try to explore at least 8 values.

	I Value	Personal Meaning of Value Word
1.	_____	_____
2.	_____	_____
3.	_____	_____
4.	_____	_____
5.	_____	_____
6.	_____	_____
7.	_____	_____
8.	_____	_____
9.	_____	_____
10.	_____	_____

VI. For your #1 ranking, list as many probable CONSEQUENCES you can imagine if that solution were implemented world-wide. Be sure to include consequences that affect such systems as: home, family, business, government, professions, economics, psychology, medicine, law, and theology.

Consequence Assessment	System		Consequence
_____	_____	1.	_____
_____	_____	2.	_____
_____	_____	3.	_____
_____	_____	4.	_____
_____	_____	5.	_____
_____	_____	6.	_____
_____	_____	7.	_____
_____	_____	8.	_____
_____	_____	9.	_____
_____	_____	10.	_____

VII. Place a (+) beside each consequence you hold as "good" and a (-) beside each consequence you hold as "bad". (Use column beside part VI.) Ask yourself, "Would I be willing to have this action or consequence applied to me?"

VIII. Tally your + and - marks. Are there any negative marks that are more important to you than the positive marks? Yes_____ No_____. If yes, star them.

IX. Do you hold any ethical principles that conflict with your number one decision or its consequences? If so, list them; then restate your solution or pick another solution (i.e., #2) and work through steps III through IX. If not, your decision is valid for you at this time in your life.

_____

X. List five reasons why others may not agree with your solution.

1. _____

2. _____

3. _____

4. _____

5. _____

XI. Restate your solution and place a confidence or conviction assessment on it by Xing the number on the confidence sequence.

High Low
1-----2-----3-----4
Confidence Confidence

"I" VALUES*

1. Self Worth
2. Community (personalist)
3. Food/Warmth/Shelter
4. Harmony/Systems
5. Intimacy
6. Recreation/Freesence
7. Self Preservation
8. Work/Labor
9. Relaxation
10. Solitude
11. Ownership
12. Prestige/Image
13. Truth/Wisdom/Insight
14. Being Liked
15. Achievement/Success
16. Transcendence/Global/Confluence
17. Justice
18. Self Competence/Confidence
19. Self Centeredness
20. Self Directedness
21. Sensory Pleasure/Sex
22. Instrumentality
23. Self Control
24. Friendship
25. Social Affirmation
26. Empathy
27. Discovery/Delight
28. Congruence
29. Equity/Rights
30. Lay/Guide
31. Knowledge/Discovery/Insight
32. Self Assertion
33. Self Delight
34. Wonder/Curiosity
35. Health (personal)
36. Creativity/Ideation
37. Security
38. Corporation/Construction/ New Order
39. Synergy
40. Being Self
41. Power/Authority/Honesty
42. Integration/Wholeness
43. Affection/Physical
44. Education (certification)
45. Interdependence
46. Community/Supportive
47. Limitation/Celebration
48. Service/Vocation
49. Cooperation
50. Presence/Dwelling
51. Education/Knowledge/Insight
52. Simplicity/Play
53. Equilibrium
54. Word
55. Ecority/Beauty/Aesthetics
56. Convivial Tools/Intermediate Technology
57. Human Dignity
58. Family/Belonging
59. Art/Beauty/As Pure Value
60. Play/Leisure

*Note: Strike out values that have no meaning for you and add others that do have meaning for you. Please try to define the added values on back of this page.